

## CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1 1. (Currently amended) A method for simulating film grain, comprising the steps of:  
2 receiving an encoded image (14);  
3 receiving film grain characterization information (25) indicative of grain in a film on which  
4 the encoded image was originally recorded prior to encoding,  
5 decoding at least the encoded image; and  
6 simulating a pattern of film grain (29) in accordance with the received film grain  
7 characterization information; ~~and~~ .  
8 ~~blending the simulated film grain pattern (29) with the decoded image (16).~~
- 1 2. (Original). The method according to claim 1 further comprising the steps of:  
2 receiving the encoded image (14) in an ITU-T H.264 video coding format; and  
3 receiving the film grain characterization information (25) as a Supplemental Enhancement  
4 Information (SEI) Message.
- 1 3. (Original) The method according to claim 1 wherein the step of receiving the film grain  
2 characterization information includes the step of receiving an identifier of which type of film stock  
3 was originally used to record the encoded image.
- 1 4. (Original) The method according to claim 1 wherein the step of receiving the film grain  
2 characterization information (25) includes the step of receiving an identifier of a model that best  
3 approximates the film grain in the film stock originally used to record the encoded image.
- 1 5. (Original) The method according to claim 1 wherein the step of receiving the film grain  
2 characterization information (25) includes the step of receiving information indicative of film grain  
3 size, intensity, spatial correlation, and color correlation.

1           6. (Original) The method according to claim 1 further including the step of separately  
2     simulating the pattern of film grain for separate groups of frames in the encoded video.

1           7. (Currently amended)           A method for simulating film grain, comprising the steps of:  
2     encoding an image (12) originally recorded on film;  
3     identifying the film grain present in the input image prior to encoding; and  
4     establishing film grain characterization information (25) for the film in accordance with the  
5     identified film grain in the image using a predefined modeling process so that upon decoding the  
6     encoding image, a pattern of film grain can be simulated in accordance with the film grain  
7     characterization information and blended with the decoded image.

1           8. (Original) The method according to claim 7 further comprising the steps of:  
2     encoding the image (12) in an ITU-T H.264 video coding format; and  
3     formatting the film grain characterization information (25) as a Supplemental Enhancement  
4     Information (SEI) Message.

1           9. (Original) The method according to claim 7 wherein the step of establishing the film  
2     grain characterization information (25) includes the step of identifying which type of type of film  
3     stock originally recorded the encoded image.

1           10. (Original) The method according to claim 7 wherein the step of establishing the film  
2     grain characterization information (25) includes the step of identifying a model that best provides an  
3     indication of film grain in the film originally recorded the image.

1           11. (Original) The method according to claim 10 wherein step of identifying the model  
2     includes choosing among a best model among a plurality of film grain models.

1           12. (Original) The method according to claim 7 wherein the step of establishing the film  
2     grain characterization information (25) includes the step of establishing film grain size, intensity,  
3     spatial correlation, and color correlation.

1           13. (Original) The method according to claim 7 further including the step of removing film  
2 grain from the image prior to encoding.

1           14. (Original) Apparatus for simulating film grain in an image, comprising of:  
2           a decoder (15, 28) for receiving an encoded image (12) and for receiving film grain  
3 characterization information indicative (25) of grain in a film on which the encoded image was  
4 originally recorded and for decoding the image; and  
5           a film grain restoration processor (30) for simulating a pattern of film grain in accordance  
6 with the received film grain parameter information; and for blending the simulated film grain pattern  
7 to the decoded image.

1           15. (Original) The apparatus according to claim 14 wherein the decoder receives the film  
2 grain characterization information (25) as parallel information to the encoded image.

1           16. (Original) The apparatus according to claim 14 wherein the decoder receives the  
2 encoded image (12) in an ITU-T H.264 video coding format; and wherein the decoder receives the  
3 film grain characterization (25) information as a Supplemental Enhancement Information (SEI)  
4 Message.

1           17. (Original) The apparatus according to claim 14 wherein the film grain characterization  
2 information (25) includes an identifier of which type of film stock originally recorded the encoded  
3 image to provide an indication of film grain.

1           18. (Original) The apparatus according to claim 14 wherein the film grain characterization  
2 information (25) includes an identifier of a model that best provides an indication of film grain in the  
3 film originally recorded the encoded image to provide an indication of film grain.

1           19. (Original) The apparatus according to claim 18 wherein the model identifier identifies  
2 the best model among a plurality of film grain models.

Serial No.: 10/552,179  
Art Unit: 2624

Docket No. PU030116  
Customer No. 24498

1           20. (Original) The apparatus according to claim 14 wherein the film grain  
2    characterization information (25) includes information indicative of film grain size, intensity,  
3    spatial correlation, and color correlation.

1           21. (Original) The apparatus according to claim 14 wherein the film grain restoration  
2    process separately simulates the pattern of film grain for separate groups of frames in the encoded  
3    video

1           21 (New) The method according to claim 1 further comprising the step of blending the  
2    simulated film grain pattern (29) with the decoded image (16).